Ecography

E4631
Spiegelberger, T., Matthies, D., Müller-Schärer, H. and Schaffner, U. 2006. Scale-dependent effects of land use on plant species richness of mountain grassland in the European Alps. – Ecography 29: 541–548.

Appendix 1. Description of study sites in France (F) and Switzerland (CH). Type of land use: F, fertilised; T, traditional; A, abandoned pasture.

Country	Region	Land use	Elevation	Inclination	Exposition	Cattle density ha^{-1}	% cover *V. album*
F	Bauges	F	1628 m	18%	W	1.2	15.9
F	Bauges	T	1607 m	27%	W	0.8	3.5
F	Bauges	A	1755 m	36%	NW	–	3.2
F	Beaufortin	F	1914 m	25%	NWN	1.3	3.3
F	Beaufortin	T	1891 m	23%	NNW	0.4	3.5
F	Beaufortin	A	1838 m	29%	WNW	–	3.6
F	Chablais	F	1550 m	36%	NNW	1.4	3.3
F	Chablais	T	1470 m	36%	NNW	1.0	4.0
F	Chablais	A	1470 m	36%	NNW	–	2.0
CH	Chablais	F	1539 m	47%	W	1.8	4.3
CH	Chablais	T	1409 m	20%	W	0.9	24.6
CH	Chablais	A	1517 m	31%	WSW	–	24.3
CH	Lac de Dix	F	1255 m	36%	NW	1.4	4.3
CH	Lac de Dix	T	1646 m	32%	WSW	0.8	5.5
CH	Lac de Dix	A	1507 m	79%	SW	–	4.5

Appendix 2. Indicator species analysis (Dufrene and Legendre 1997) for plant species of mountain grasslands in the Alps. All p-values <0.01. Species are arranged according to the land use type they indicate (F = fertilised pastures; T = traditional pastures; A = abandoned pastures).

Species	Indicator species for	Cumulative presence			Mean cover		
		F	T	A	F	T	A
Festuca rubra	F	46	45	35	9.4	8.6	3.1
Cynosurus cristatus	F	35	21	19	6.0	2.6	2.2
Anthoxanthum odoratum	F	29	21	12	3.6	1.7	1.2
Taraxacum officinale	F	25	10	10	1.4	0.5	0.6
Luzula alpinopilosa	F	24	22	1	2.0	0.9	0.1
Leontodon autumnalis	F	22	8	1	1.1	0.3	0.1
Carum carvi	F	17	7	3	2.7	0.4	0.0
Phleum phleoides	F	10	0	0	3.1	0.0	0.0
Knautia dipsacifolia	F	7	0	1	0.1	0.0	0.0
Trifolium pratensis	T	36	38	15	1.7	2.6	0.8
Leucanthemum vulgare	T	5	21	12	0.1	0.5	0.3
Lotus corniculatus	T	8	18	4	0.3	0.9	0.1
Geum montanum	T	5	17	3	0.2	0.5	0.1
Crepis aurea	T	6	16	0	0.1	0.7	0.0
Homogyne alpina	T	1	15	4	0.0	0.6	0.2
Phyteuma orbiculare	T	4	14	2	0.1	0.4	0.0
Cirsium acaule	T	0	14	0	0.0	0.7	0.0
Hieracium lactucella	T	6	12	0	0.2	0.6	0.0
Polygala vulgaris	T	0	10	1	0.0	0.2	0.0
Phyteuma betonicifolium	T	0	10	0	0.0	0.2	0.0
Arnica montana	T	0	10	0	0.0	1.5	0.0
Alchemilla flabellata	T	0	10	0	0.0	0.5	0.0
Poa pratensis	T	0	9	2	0.0	2.2	0.4
Myosotis sylvatica	T	1	9	0	0.0	0.2	0.0
Galium mullogo	T	0	9	1	0.0	0.1	0.0
Holcus mollis	T	0	8	1	0.0	1.2	0.0
Centaurea pseudophrygia	T	3	8	0	0.2	0.8	0.0
Carex sempervirens	T	0	8	0	0.0	0.5	0.0
Orchis mascula	T	0	6	0	0.0	0.1	0.0
Gagea fistulosa	T	0	6	0	0.0	0.1	0.0
Deschampsia caespitosa	A	7	25	28	0.7	4.2	8.4
Chaerophyllum hirsutum	A	33	43	48	1.9	4.6	6.5
Geranium sylvaticum	A	22	34	39	1.4	2.5	5.1
Heracleum sphondylium	A	2	0	7	0.1	0.0	2.6
Phleum pratensis	A	0	10	16	0.0	0.9	1.6
Rubus sp.	A	0	0	7	0.0	0.0	1.3
Bromus erectus	A	3	0	8	0.1	0.0	1.2
Equisetum sylvaticum	A	0	0	8	0.0	0.0	0.8
Hypericum maculatum	A	9	14	21	0.1	0.2	0.7
Carex montana	A	0	0	6	0.0	0.0	0.6
Rosa canina	A	0	0	8	0.0	0.0	0.4
Myosotis decumbens	A	0	0	8	0.0	0.0	0.4
Centaurea jacea	A	6	2	15	0.1	0.0	0.4
Cardamine pratensis	A	0	0	8	0.0	0.0	0.1